Journal of Cardiovascular Disease Research

ISSN: 0975-3583,0976-2833 VOL14, ISSUE 07, 2023

ORIGINAL RESEARCH

Benign Breast Diseases

[1]Dr. Anil Wattamwar, [2]Dr. N. Baba Guru Prasad, [3]Dr. Anne Akhil

[1]Associate Professor, Department of General Surgery, Kamineni Institute of Medical Sciences, Narketpalli, Hyderabad, Telangana, India.
[2]Associate Professor, Department of General Surgery, Kamineni Institute of Medical Sciences, Narketpally, Nalgonda, Telangana, India.
[3]Postgraduate, Department of General Surgery, Kamineni Institute of Medical Sciences, Narketpally, Hyderabad, Telangana, India.

Corresponding Author:Dr. N. Baba Guru Prasad

Article History: **Received:** 08.06.2023 **Revised:**07.07.2023 **Accepted:** 18.07.2023

ABSTRACT

Background: This study was conducted to evaluate the patients presenting with breast disorders, understand the various types of benign breast diseases, diagnostic evaluation and treatment from the literature, early diagnosis of benign breast diseases, increasing the accuracy of such diagnosis through 'triple assessment' viz., clinical examination, breast imaging and percutaneous needle biopsy and determine the frequency of benign breast diseases with 1-year follow-up.

Methods: After receiving approval from the institutional ethics committee and written informed consent from the study participants, this hospital-based prospective study was carried out among 100 female patients in the age range of 15 to 55 years who presented with breast discomforts in the Department of General Surgery at SVS Medical College, Mahabubnagar from November 2016 to October 2018.

Results: The accuracy of diagnosis has been enhanced as a result of clinical diagnosis, FNAC, and histology. Fibroadenoma was the commonest lesion (48 cases, 48%) followed by fibrocystic disease (28 cases, 28%). Lump was the most frequently presented complaint. The upper outer quadrant was the commonest location. Clinico-pathological correlative studies showed 96% sensitivity and cyto-histological correlative studies showed 87% sensitivity.

Conclusion: Benign breast diseases are common among reproductive women, with fibroadenomas and fibrocystic disease accounting for most cases. The majority of benign breast lesions presented with painless lumps except for fibrocystic disease, breast abscess and acute mastitis. Based on FNAC and histopathology an effective protocol can be instituted. Inflammatory breast lesions were found more frequently among rural populations due to poor hygiene. Triple assessment provided a quick diagnosis of breast diseases, alleviated anxiety and gave much relief to the patients when lesions proved benign.

Keywords: Benign Breast: Disease, Breast Abscess, Cyclical Mastalgia, Fibroadenoma, Fibrocystic Disease, Mastalgia, Neoplasms

INTRODUCTION

Benign Breast Disease (BBD): benign means not cancerous. Benign breast disease is marked by a common condition of non-cancerous changes in breast tissue. These changes may include irregular lumps or cysts, swollen, tender breasts, one or more lumps, breast discomfort, sensitive nipples, itching or chronic mastitis (inflammation). These symptoms may change throughout the menstrual cycle and usually stop after menopause. Most women who experience these symptoms do so for a brief period of time; nevertheless, some women report intense agony. These symptoms are called fibrocystic breast changes, fibrocystic breast disease, and mammary dysplasia. Some people contend that these are fibrocystic breast alterations and not illnesses because they are typical and healthy conditions that women experience as a result of hormonal changes during their menstrual cycles. A woman's lifetime will see alterations to her breast tissue. Breast tissue is particularly sensitive to estrogen and progesterone hormone levels, which often fluctuate during the menstrual cycle. The incidence of benign breast lesions begins to rise during the second decade and peaks in the fourth to fifth decades, as opposed to malignant diseases, where the incidence continues to increase after menopause with a peak incidence at the age of 70 years. The research suggests that if breast biopsies from women with BBDs show abnormal breast cells, they are more likely to develop breast cancer later.[1]Also, proliferative changes in certain cells in the breast may increase the risk of breast cancer. Examples include ductal hyperplasia, lobular hyperplasia and papillomas. All breast lumps must be explored to rule out breast cancer and/or to start prompt treatment if breast cancer is discovered. However, most women with fibrocystic breasts will not have abnormal breast cells when a biopsy is conducted. In many cases, what brings a woman to see her doctor is no more than an ANDI

ISSN: 0975-3583,0976-2833 VOL14, ISSUE 07, 2023

(Aberration of Normal Breast Development and Involution). The majority of BBD diagnoses are made when a patient complains of symptoms like a lump or pain or after breast imaging reveals abnormalities that necessitate a percutaneous biopsy. However, when mammographic and pathologic findings are discordant or in the case of high-risk lesions with a pre-invasive or invasive malignancy, a formal excisional biopsy is recommended. The majority of patients presenting with breast complaints will be found to have benign conditions. In the majority of these lesions, a diagnosis may be made quickly and without the need for subsequent surgical care using breast imaging or percutaneous needle biopsy. Once a non-malignant diagnosis has been made, therapy is often focused on symptom alleviation and patient education. Treatment of these disorders involves a combination of reassurance, medical treatments and surgery.

Identification of Benign Breast Disease

In addition to the general medical history, a special breast-focused history should be collected and documented when a woman presents with breast symptoms or concerns. The right or left breast should be meticulously labelled, and an exact diagram of the symptoms' location should be included in the report.

The following interaction with patients initiates the identification of benign breast diseases:

1. Primary breast symptom and the time it began.
2. Age
3. The time since her last period;
4. A history of breast cancer in the family
5. Age at menarche and first pregnancy;
6. number of children and history of breastfeeding;
7. Any breast surgery or breast biopsy;
8. A family history of breast or ovarian cancer (particularly a mother or sister), mentioning the age at diagnosis;
9. What's the texture of the lump? How firm or soft is it? Is it gritty to the touch?
10. What size lump is present? Has it gotten bigger since she first saw it, or smaller?
11. Any nipple discharge?
12. Breast injuries of any kind
13. When and how the most recent mammography turned out.

Has she ever used tamoxifen, raloxifene, oestrogen replacement treatment, hormone replacement therapy, oestrogen with progesterone, or oral contraceptives?

Aims and Objectives

- Understanding the various types of benign breast diseases, diagnostic evaluation and treatment from the literature
- Early diagnosis of benign breast diseases
- Increasing the accuracy of such diagnosis through ‘triple assessment’ viz., clinical examination, breast imaging and percutaneous needle biopsy
- To determine the frequency of benign breast diseases with a 1-year follow-up.

This study analysed the impact of age incidence, clinical presentation and correlating clinico-pathological andradoiological aspects relating to benign breast diseases.

MATERIALS & METHODS

After receiving approval from the institutional ethics committee and written informed consent from the study participants, this hospital-based prospective study was carried out among 100 female patients in the age range of 15 to 55 years who presented with breast discomforts, in the Department of General Surgery SVS Medical College, Mahabubnagar from November 2016 to October 2018.

Inclusion Criteria

1. Outpatients and inpatients in the surgical wards complaining of breast discomfort, either alone or in conjunction with a lump or nodule in the breast.
2. The existence of a breast lump.
3. Nipple discharge
4. Breast abscess without lactation.
5. Acute breast abscess during lactation

Exclusion Criteria

Biopsy proven malignancy of the breast lump.

ISSN: 0975-3583,0976-2833 VOL14, ISSUE 07, 2023

RESULTS

Side	Frequency	Percent
Left	30	30.0
Right	48	48.0
Bilateral	22	22.0
Total	100	100.0
Distribution of the Sample by Side		
Side	**Frequency**	**Percentage**
UO	7	32%
UI	2	9%
LO	3	14%
C	4	18%
WB	4	18%
LO+Axillary Tail	2	9%
Total	22	100%
Distribution of the Sample in Cases of Bilaterality		
Table: 1		

To ascertain which breast was more frequently affected by benign breast disease, data were analysed in this dataset.

Lesion	Size			Total	Kumar et al		
	<2 Sq cm	2-5 sq cm	>5 sq cm		<2 Sq cm	2-5 sq cm	>5 sq cm
Fibroadenoma	0	46	3	49	84	67	7
Fibrocystic disease	12	14	2	28	80	15	0
Duct ectasia	0	0	1	1	18	0	0
Phyllodes tumour	0	0	4	4	0	0	2
Cyclical mastalgia	2	0	0	2	0	0	0
Breast abscess	0	10	2	12	0	5	6
Galactocele	0	4	0	4	0	0	0
Total	14	74	12	100	182	87	15
Table 2: Distribution of the Sample by Size of Lesion and Clinical Conditions							

In this study, the part that was most frequently implicated (46%) was the upper outer quadrant. The upper outer quadrant of the breast was found to be the most often affected area of the breast when comparing the results of this study with those of Oluwole (60%) Kumar et al. (60%) and T.Dicholnoky (50%) studies. According to the justification offered, breast lesions are more frequently discovered in the upper outside quadrant since this is where the breast's largest bulk is located. In the 100 instances that were examined for this investigation, the lumps' diameters varied from <2 square centimeters to 5+square centimeters. The smallest lesion was 0.4 sq. cm (4mm x 4mm) whereas the largest diagnosed was 7 sq.cms(7 X 7 cms). Kumar et al. had a frequency of 47.6% of lumps <2cms as compared to only 14% in our series. T.Dicholnoky study showed 57% of the lesions between 2-5 cm, in concordance with our findings of 74%. HaagensonCD[2] study had a phyllodes tumour rate of 28%, all less than 5 cm.

Lesion	Management					
	Excision/ Enucleation	Drugs	Simple mastectomy	Aspiration	Microdochotomy	I&D
Fibroadenoma	41					
Giant fibroadenoma	8					
Fibrocystic disease	17	11				
Cyclical mastalgia		2				
Duct ectasia					1	
Phyllodes tumour			4			
Breast abscess						12
Galactocele				4		
Table 3: Distribution of the Sample by Provisional Diagnosis and Treatment						

ISSN: 0975-3583,0976-2833 VOL14, ISSUE 07, 2023

In the current series, fibroadenoma was the most prevalent lesion (49%), followed by fibrocystic disease (28%), and other lesions in varying degrees. Larsen TK,[3] stated that fibroadenomas in adolescents can be safely treated conservatively; however, for an adult woman, a benign triple test is a prerequisite for conservative treatment. Houssami, N Chang MN et al.[4] accepted that conservative treatment for a fibroadenoma is possible provided that the result of the triple test is both negative for cancer and consistent with afibroadenoma

Lesion	**FNAC**						**Total**
Fibroadenoma	47 96%	2 4%					49 100%
Cyclical mastalgia				2 100%			2 100%
Fibrocystic disease	26 93%		2 7%				28 100%
Duct ectasia					1 100%		1 100%
Phyllodes tumour	3 75%			1 25%			4 100%
Breast abscess				NA			NA
Galactocele						4 100%	4 100%
Total	76	2	2	3	1	4	88 100%
Accuracy of Clinical Diagnosis by FNAC							
Lesion	**HPE**						**Total**
Fibroadenoma	44 89.7%		5 10%				49 100%
Cyclical mastalgia			2 100%				2 100%
Fibrocystic disease		20 100%					20 100%
Duct ectasia				1 100%			1 100%
Phyllodes tumour	3 75%				1 25%		
Breast abscess			NA				NA
Galactocele						4 100%	4 100%
Total	47	20	7	1	1	4	80 100%
Accuracy of FNAC against HPE							
Table 4							

Provisional Diagnosis	**Sensitivity**	**Histopathology**	**FNAC**
Fibroadenoma	99.4	+	-
Cyclical mastalgia	100	-	-
Fibrocystic disease	97	-	+
Duct ectasia	-	-	-
Phyllodes tumour	100	+	
Breast abscess	100	-	+
Galactocele	85.8	-	+
Table 5: Accuracy of Clinical Diagnosis against Cytology and FNAC (Kumar et al.)			

Comparison of Clinical Diagnosis with FNAC of Fibroadenoma
Sensitivity = 96.0%.

Fibroadenoma FNAC and HPE comparison
It was established by HPE that FNAC was carried out in all 49 cases. 89.7% sensitivity.

Fibrocystic Disease Clinical Diagnosis and FNAC Comparison

ISSN: 0975-3583,0976-2833 VOL14, ISSUE 07, 2023

HPE determined that FNAC was completed in each of the 49 cases. 89.7% sensitivity.
Clinical diagnostic sensitivity is 93%.

FNAC and HPE Comparison for Fibrocystic Disease

HPE was done in only 20 cases of Fibrocystic disease, as the rest were managed conservatively by drugs. The histopathologic lesions that FNAC identified as fibrocystic illnesses demonstrated 100% sensitivity. Overall clinical diagnostic sensitivity against FNAC was 89.45%. The overall FNAC sensitivity to HPE was 87.22%.

Lesion	Frequency	Clinical Provisional Diagnosis	Mammography Detected	Breast USG Detected
Fibroadenoma	49	44	5	-
Fibrocystic Disease	28	20	4	4
Phyllodes Tumour	4	3	2	-
Duct Ectasia	1	1	1	-
Cyclical Mastalgia	2	0	2	-
Breast Abscess	12	4	4	12
Galactocele	4	0	1	4
Total	100		19	20

Table 6: Accuracy of Clinical Diagnosis against Imaging

Mammography was offered to 5 equivocal cases of fibroadenomas, and 1 case of duct ectasia, all of which were detected definitively (sensitivity of 100%). Eight cases of fibrocystic disease underwent mammography, of which the sensitivity was 50%. This was due to the predominantly solid component of the disease process.
Only 2 of the 4 cases of benign phyllodes (50% sensitivity),4 cases of breast abscess(30% sensitivity) and 1 case of galactocele (25% sensitivity) were detected by mammogram. This was in contrast to 100% sensitivity with regards to breast USG, demonstrating the superiority of this high frequency technique in detecting cystic lesions of the breast. Further breast USG has also been shown to guide the diagnosis and treatment of clinically impalpable breast lesions (1 cm) and cases of fibrocystic disease with a predominantly cystic component.

DISCUSSION

From the statistics shown above in this study, it is clear that fibroadenoma and fibrocystic disease account for more than 75% of all benign breast disorders. In the current investigation, fibroadenomas made up 49% of the overall number of tumours. Thus, we conducted a more thorough analysis of this lesion. This corresponds with the findings of other authors, viz. Kumar et al.[5] and Krishnas wamy[6] (41%) respectively. Ranga bhashyam, Gnanaprakash D. et al.[7] reported similar findings in their study in the Madras journal (82%). HaagensonCD[2] reported a corresponding figure of 70%. Of these 49 cases, 46 (93.8%) were isolated fibroadenomas that affected just one breast. There were three instances of multiple fibroadenomas (6.12%). 3 instances (6.12%) of bilateral fibroadenomas were found. The upper outer quadrant made up 55% of the series, followed by the centre quadrant at 12%, the lower outer quadrant at 4%, and the lower inner quadrant at 2%. According to this study, the top outside quadrant was the one that was most commonly affected. T.Dicholnoky[8] reported a frequency of 50 % of the lumps in the upper outer quadrant, which was similar to what Krishnaswamy[6] reported.This occurrence is in accordance with the fact that most of the breast tissue is in this quadrant and hence symptomatology was at its maximum here. The sides of each breast's involvement with fibrodenomas were also compared in this investigation. It was discovered that right breast involvement in fibroadenoma affected 53% of cases, whereas left breast involvement affected 25% of cases and bilateral involvement affected 22% of instances in Oluwole (New York). Oluwole's findings and ours were more similar in terms of bilaterality since our study included cyclical mastalgia. Kumar et al. showed a slight right sided preponderance (right 47%;left 40%)of benign breast disease in general and fibroadenomas in particular. Similar findings were echoed by Krishnaswamy but were found to be statistically insignificant. The first two recurring fibroadenomas in this report underwent surgery after 4½ and 2 years, respectively, while the third instance recurred after 9 months and was determined to be fibroadenosis by FNAC. Due to none of our patients using oral contraceptives, our study was unable to evaluate any relationships with oral contraceptives. In this series, fibroadenomas most frequently occur in people between the ages of 15 and 30. In this investigation, this tumour appeared in patients as young as 16 years old and as elderly as 29 years old. This incidence was almost a decade earlier than fibrocystic disease and was similar to the findings of Gupta et al.[9](80%),T.Dicholnoky (85%) and Oluwole[1] (48%) all of whom showed a preponderance of lesions in the 16-40 age group. This study found that lump alone was the only mode of presentation, with all patients presenting with the same lump (100%).
Ten and two years ago, respectively, two cases of fibroadenoma developed lactation breast abscesses that were drained, and their post-operative recoveries were uncomplicated. Bilateral fibroadenoma cases have chosen to have both sides operated on at the same time. The two instances that required surgery, first-degree relatives had

ISSN: 0975-3583,0976-2833 VOL14, ISSUE 07, 2023

a family history of benign breast illness. Out of the 100 female patients evaluated, 21 were single. Most fibroadenomas in our study were in the 2-5 cms bracket, unlike what was reported by Kumar et al. where lesions < 2cms were the most common (22%), followed by 2-5cms (17%).Only 7 cases were >5cm in the Kumar et al. series and were classified as giant fibroadenomas as per the definition. It was discovered that there were 28 instances, or 28%, of fibrocystic disease in this series. According to Kumar et al., the prevalence of fibrocystic disease was 41.5%. Rangabhashyam,Gnanaprakash D. et al. and colleagues reported a frequency of 56.7% fibroadenomas and 14.2% fibrocystc disease. Much lower than what our series showed. Oluwole, however, reported similar findings in blacks. Furthermore, it became clear that fibroadenoma was more prevalent in India than fibrocystic illness, with early menarche, early marriage, and the multiparity of Indian women serving as potential explanations. Between the ages of 25 and 40, fibrocystic disease was more common. When the symptomatology was examined, it was discovered that the majority of patients had breast discomfort and lumps that were followed by pain, which is typical of benign breast illness in general. The involvement of a particular quadrant and a side of the breast nearly came after that of benign breast disease in general. (42% of cases) impacted the upper outer quadrant. Most fibrocystic disease lesions were nodular on the surface and ranged in size from 2-4 cm. Most people's mobility was limited, and only a few people had complete freedom of movement. Kumar et al. reported figures of 21% for lumps < 2cm and only 3% of fibrocystic disease between 2-5 cm. In 24 patients with fibrocystic illness, this investigation found no evidence of a family history of benign breast disease. Three patients had previously had similar problems. Two of these instances had lesions in the breast on the other side, while one case had them on the same side. Of the 28 instances of fibrocystic illness, 8 patients received 3 months of conservative treatment with either a tab of Danazol or a capsule of evening primrose oil. Everyone reacted nicely. However, after discontinuing the evening primrose oil, the symptoms returned. For cyclical mastalgia, however, patients taking danazol 100 mg OD reported a 50% reduction in symptoms in 1-2 weeks and were symptom-free by the end of a month. Patients who had nodules were given 200–400 mg of danazol, and after three months, they stated that the nodules had disappeared. Some patients stopped taking the medication because it was expensive and insisted on having their moles removed surgically, which was done subsequently. Even after being given assurance, several of the patients remained uneasy and concerned. They were therefore surgically treated, although the majority of educated women who were reassured chose a conservative course of action. The rest of the 20 pts. were treated with surgical excision as a primary line of management and HPE proved fibrocystic disease in all the cases, which was a major source of reassurance for the women. This study encountered 12 cases (12%) of breast abscesses. Of these 10 cases (10%)were lactational breast abscesses and 2 cases (2%) were non lactational breast abscesses. One instance was reported with a two-month history, and the earliest case presentation was 10 days after the commencement of symptoms.The average time of presentation was 16 days. 4 patients were above 40 years and 2 patients were lactating. Under the coverage of antibiotics, incisions and drainage were used to treat each patient. Kumar et al. reported 51 cases of breast abscesses, all of which were lactational, constituting 13.42%. This was similar to the 10% found in our study. Breast abscesses were commonly seen in the 21–30 age group (32.8%), followed by the 31–40 age group (39.4%).Ultrasound was a very good adjunct in diagnosing breast abscesses in our series. It could accurately diagnose 95% of the cases of breast abscesses in their early stages. All of the above patients were treated with incision, drainage, and antibiotics in Kumar's study. The above findings coincide with the prevalent assumption that lactation is a predominant risk factor for the development of breast abscesses and that I&D under antibiotic cover is the preferred mode of management. This study encountered 4 cases (4%) of phyllodestumor (the benign variety).This was similar to the findings of Krishnaswamy (4 cases) and Kumar et al(3 cases). All cases measured >5 sq cm in size and had a duration of < 1 month. All the patients underwent simple mastectomy, one case was clinically diagnosed to be aphyllodes tumour but FNAC-proved to be a fibroadenoma and hence underwent simple mastectomy and HPE turned out to be aphyllodestumor. All 4 cases proved on HPE to be low grade variants of phyllodes with no malignant variants, proving that our treatment of simple mastectomy was adequate. In this series, there was1 case (1%) of duct ectasia, which presented in the 4th decade with symptoms of a hard mobile lump in the upper and outer quadrants of the breast and nipple discharge of 5 months duration. Clinically and FNAC diagnosed as duct ectasia, the patient was subjected to microdochotomy and post-op HPE confirmed the diagnosis. Nipple discharge as a predominant symptom was noted in 21 (5.5%) cases of fibrocystic disease, 2 cases of papilloma and 3 cases of duct ectasia in Kumar's study. In this series, four cases of galactocele were studied. All the cases presented were in the 25–30 age bracket, with lump being the commonest mode of presentation (3 cases, 75%). All the cases presented with a smooth mobile lump in the upper outer quadrant of the right breast, with 3 cases presenting a duration of <1 month. 1 case presented with a painful lump of duration 5 months. All four cases were managed with one session of needle aspiration, with a 100 % success rate. The frequency was similar to Kumar et al. who noted 6 cases of galactocele all 2- 5 cm long and 2 of which presented with milky discharge. Treatment was along the same lines as our study.

CONCLUSION

ISSN: 0975-3583,0976-2833 VOL14, ISSUE 07, 2023

With fibroadenoma being the most common issue, it was most prevalent in the upper outer quadrant and in the reproductive age range. Regarding fibroadenoma and fibrocystic disease, there was a high association between the clinical diagnosis, FNAC, and HPE. These instances had successful surgery and medical therapy, with remission of the pre-operative symptoms. Mammography could detect cyclical mastalgia in most cases. Galactocele and breast abscesses were well detected by ultrasound examination of the breast, where a clinical dilemma was present regarding the diffuse swelling. The majority of benign breast problems are now managed conservatively, which has decreased the number of surgeries required to treat them. However, many patients choose an early surgical approach to symptom relief due to their worry about their symptoms, the distance to travel, and the difficulties in following up due to poor socioeconomic situations.

REFERENCES

1. Oluwole SF. Analysis of BBD in Blacks. Am J Surg 2010;137:786-9.
2 Haagensen CD. Diseases of the breast. 3rd edn. Philadelphia: WB Saunders Co 1986: p 50.
3 Larsen TK, Faurschou JP, Bak M, Ryttov NF. Fibroadenoma of the Breast – modern strategy of treatment .UgeskrLaeger 2003;165(19):1979-83.
4 Haussami N, Cheung MN, Dixon JM. Fibroadenoma of the breast. Med J Aust 2001;174(4):185-8.
5 Kumar M, Ray K, Harode S, Wagh DD. The pattern of benign breast diseases in rural hospital in India. East and Central African Journal of Surgery 2010;15(2):59-64.
6 Krishnaswamy U. Profile of benign breast disease in the urban India. Ind J Surg 2003;65(2):178-81.
7 Rangabashyam N, Gnanaprakasan D, Krishnaraj B, Manohar V, Vijayalakshmi SR. Spectrum of benign breast lesions in Madras. J R CollSurgEdinb 1983;28(6):369-73.
8 Dicholnoky T. Benign tumors of the breast .Arch Surg 1937;38:79.
9 Gupta JC. Breast lumps in Jabalpur area- review of 1104 cases. Indian J Surg 1983;45:268.